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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,652	03/23/2001	Manish Airy	P126US1	6856

7590 06/29/2005

Michael Proksch
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025

EXAMINER	
NG, CHRISTINE Y	

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,652	AIRY ET AL.	
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,13-20,25-32 and 37-41* is/are rejected.

7)☒ Claim(s) *9-12,21-24 and 33-36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8, 13-18, 20, 25-30, 32 and 37-41 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,738,363 to Best et al.

Referring to claims 1 and 13, Best et al disclose in Figure 3 a system for scheduling information in a multiple antenna wireless cellular network, the wireless cellular network comprising a base transceiver station (BSS 304) and a plurality of subscriber units (MS 310) wherein each of the plurality of subscriber units (MS 310) belongs to a service class (ongoing/new CBR/non-CBR). Refer to Column 7, lines 14-24 and Column 9, line 21-40. The system comprises:

Means (through BSS 304) for receiving a service flow request (resource request) from a subscriber unit (MS 310). Refer to Column 8, lines 39-42.

Means (through MSC 306) for determining the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310). Refer to Column 8, lines 42-46 and Column 9, line 21-40.

Means (through MSC 306) for scheduling time slots and frequency blocks within

a communication channel (Figures 11 or 13) for the service flow request (resource request) based, at least in part, on the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310). Refer to Column 8, lines 49-56 and Column 9, line 21-40.

Referring to claim 25, refer to the rejection of claims 1 and 13. Furthermore, Best et al disclose that the method can be performed by a computer readable medium containing program instructions. Refer to Column 7, lines 37-43 and Column 8, lines 17-22.

Referring to claim 37, Best et al disclose in Figure 3 a scheduler (MSC 306) for scheduling information in a multiple antenna wireless cellular network, the wireless cellular network comprising a base transceiver station (BSS 304) and a plurality of subscriber units (MS 310) wherein each of the plurality of subscriber units (MS 310) belongs to a service class (ongoing/new CBR/non-CBR). Refer to Column 7, lines 14-24 and Column 9, line 21-40. The scheduler comprises:

A buffer (resource request queue) for receiving a service flow request (resource request) from a subscriber unit (MS 310). Refer to Column 8, lines 43-46.

A processor (processing unit) for determining the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310) and scheduling time slots and frequency blocks within a communication channel (Figures 11 or 13) for the service flow request (resource request) based, at least in part, on the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310). Refer to Column 7, lines 32-36; Column 8, lines 49-56 and Column 9, line 21-40.

Referring to claims 2, 14, 26 and 38, Best et al disclose in Figures 5 and 6 that the service class (ongoing/new CBR/non-CBR) comprises a priority ranking. The services classes are allocated time/frequency channels in the prioritized order of: ongoing CBR connections (Steps 508 or 608), ongoing non-CBR connections (Steps 510 or 609A), new CBR connections (Steps 511 or 609B), and then new non-CBR connections in order of increasing size of request or decreasing size of unit revenue (Steps 512 or 610). Refer to Column 9, lines 21-61 and Column 10, lines 45-67.

Referring to claims 3, 15, 27 and 39, Best et al disclose that scheduling time slots and frequency blocks (Figures 11 or 13) for the service flow request (resource request) based on the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310) further comprises: means (MSC 306) for scheduling time slots and frequency blocks (Figures 11 or 13) for the service flow request (resource request) based on the service class (ongoing/new CBR/non-CBR) and the priority ranking of the subscriber unit (MS 310). Refer to the rejections of claims 2, 14, 26 and 38.

Referring to claims 4, 16, 28 and 40, Best et al disclose that the service class (ongoing/new CBR/non-CBR) comprises more than one service class and the means for scheduling time slots and frequency blocks (Figures 11 or 13) for the service flow request (resource request) based on the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310) further comprises: means for (MSC 306) utilizing a different algorithm to schedule the time slots and frequency blocks (ongoing/new CBR/non-CBR) for each service class (ongoing/new CBR/non-CBR). Ongoing CBR subscribers are allocated the same communication channels currently granted; ongoing

non-CBR subscribers are compacted into contiguous communication channel slots at the end of the communication channel allocation table; new CBR connections are packed in between the ongoing CBR and non-CBR subscribers; and the new non-CBR connections are allocated according to increasing size of request or decreasing size of unit revenue. Refer to Column 9, lines 21-61; Column 10, lines 45-67 and Figures 11 or 13.

Referring to claims 5, 17 and 29, Best et al disclose that the system further comprises means (MSC 306) for utilizing a first algorithm (allocating resources for new non-CBR subscribers in order of increasing size of request or decreasing size of unit revenue) to schedule time slots and frequency blocks (Figures 11 or 13) for a first service class (new non-CBR). Refer to Column 9, lines 51-61 and Column 10, lines 60-67.

Referring to claims 6, 18 and 30, Best et al disclose in Figures 10-13 that utilizing the first algorithm (allocating resources for new non-CBR subscribers in order of increasing size of request or decreasing size of unit revenue) to schedule time slots and frequency blocks (Figures 11 or 13) for the first service class (new non-CBR) comprises:

Means (MSC 306) for creating a node tree (Figures 10 or 12). Refer to Column 13, lines 44-50 and Column 14, lines 28-33.

Means (MSC 306) for implementing (Figures 11 or 13) the first algorithm (allocating resources for new non-CBR subscribers in order of increasing size of request

or decreasing size of unit revenue) via the node tree (Figures 10 or 12). Refer to Column 14, lines 11-13 and Column 15, lines 7-9.

Referring to claims 8, 20 and 32, Best et al disclose that the system further comprises means (MSC 306) for utilizing a second algorithm (allocating new CBR subscribers in between ongoing CBR and non-CBR subscribers) to schedule time slots and frequency blocks (Figures 11 or 13) for a second service class (new CBR). Refer to Column 9, lines 27-29.

Referring to claim 41, refer to the rejection of claims 5, 17 and 29 and the rejection of claims 8, 20 and 32.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7, 19 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,738,363 to Best et al.

Best et al do not specifically disclose that the first service class (new non-CBR) comprises subscriber units (MS 310) requiring a guaranteed real-time data rate.

However, new non-CBR subscribers can include real-time variable bit rate (VBR) subscribers; real-time VBR initially allocates bandwidth to a call but the rate is allowed to increase if bandwidth is available. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the first service

class (new non-CBR) comprises subscriber units (MS 310) requiring a guaranteed real-time data rate; the motivation being in order to utilize real time VBR so that the cell rate can vary with the connection, thereby facilitating real-time transmissions with a dynamic cell rate.

Allowable Subject Matter

5. Claims 9-12, 21-24 and 33-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed March 1, 2005 have been fully considered but they are not persuasive.

Referring to the argument of independent claims 1, 13, 25 and 37 that Best et al fails to anticipate or suggest at least the element of scheduling time slots and frequency blocks within a communication channel, refer to the rejection of claim 1. In Figure 3, the MSC 306 schedules time slots and frequency blocks within a communication channel (Figures 11 or 13) for the service flow request (resource request) based, at least in part, on the service class (ongoing/new CBR/non-CBR) of the subscriber unit (MS 310). Refer to Column 8, lines 49-56 and Column 9, line 21-40. Ongoing CBR subscribers are granted the same communication channels currently granted. Ongoing non-CBR subscribers are compacted into contiguous communication channel slots and positioned at the end of the communication channel. New CBR subscribers are positioned

between the ongoing CBR subscribers and the ongoing non-CBR subscribers. New non-CBR connections are given the remaining slots.

Referring to the argument of independent claims 7, 19 and 31 (page 10, line to page 11, line 12), Best et al do not specifically disclose that the new non-CBR includes subscribers requiring a guaranteed real-time data rate. However, non-CBR includes any other type of ATM service classes. Best et al disclose the need for making real time resource allocation decisions. Refer to Column 2, lines 18-20; Column 3, lines 45-48 and lines 59-62; and Column 15, lines 23-26. The Action suggests that since the CBR service class is intended for real-time applications, another non-CBR ATM traffic class that can be used for real-time applications is real-time VBR. All other ATM traffic classes (non-real-time VBR, UBR, ABR) are intended for non-real-time applications. Real-time VBR is a good candidate for transmitting real-time applications such as voice and video, in which the source transmits data at a rate that varies with time. See U.S. Patent No. 6,690,678 to Basso et al, Column 1, lines 43-64 and Column 8, lines 39-61.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CN
June 9, 2005

RICKY NGO
RY EXAMINER
9/27/05